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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,759	12/08/2003	Naoki Matsuda	0425-1097P	9355
2292	7590	03/08/2006		
BIRCH STEWART KOLASCH & BIRCH			EXAMINER	
PO BOX 747			GOODEN JR, BARRY J	
FALLS CHURCH, VA 22040-0747			ART UNIT	PAPER NUMBER
			3616	

DATE MAILED: 03/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/728,759	MATSUDA ET AL.
	Examiner	Art Unit
	Barry J. Gooden Jr.	3616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 08 December 2003.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-10 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/8/04 & 5/20/04</u> | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities:

At page 8, next to last line "fist" should be replaced with -- first --.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

2. In regards to claim 5, "flammability of the second combustion chamber is adjusted by the communication hole" is unclear. It appears that the flammability of the second combustion chamber is adjusted by adjusting the ratio of the surface area of the gas generating agent and the opening diameter of the gas discharging nozzle (i.e. adjusting the combustion pressure of the second combustion chamber) (Applicant's specification pg. 8, last paragraph). The claim language provided appears to suggest an active adjusting process. Examiner suggests replacing "is adjusted by the communication hole" with -- is adjusted by varying the diameter of the communication hole --.

3. In regards to claim 9, "a combustion state of a gas generating agent in the second combustion chamber is controlled by the communication hole" is unclear for the same reasons as claim 5 is unclear; the claim appears to suggest an active adjusting process, which there is no support for. Examiner suggests replacing "is controlled by the communication hole" with -- is controlled by varying the diameter of the communication hole --.

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4. In addition, in regards to claim 9, "a volume ratio of the first combustion chamber and the second combustion chamber is adjusted in the range of 1/1 to 9/1 by the partition wall" is unclear for similar reasons as given above. The partition wall does not actively adjust the volume ratio of the chambers. Examiner suggests replacing "by the partition wall" with -- by varying the position, thickness, and diameter of the partition wall --.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The applied reference (Nakashima et al., US Patent 6,364,354 B1) has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR

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1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

7. Claims 1-3 and 5, 6 and 8-10, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakashima et al., US Patent 6,364,354 B1.

In regards to claims 1-3, Nakashima et al. show a gas generator for an air bag comprising a housing (3) having a gas discharge hole (26), first (12a) and second (12b) ignition means activated by the impact, and first and second (5a,5b, respectively) combustion chambers accommodating therein gas generating agents (9a,9b, respectively) which are ignited and burnt to generate a combustion gas, wherein the first combustion chamber (5a) and the second (5b) combustion chamber are separated from each other by a partition wall (7);

wherein an inner cylinder (4) is disposed in the housing (3), an annular first combustion chamber (5a) is provided outside the inner cylinder (4), two ignition means (1a,12b) are provided at the lower side in the inner cylinder (4) and further, a second combustion chamber (5b) is provided at the upper side in the inner cylinder (4)(See Figure 16); and,

wherein a diameter of the inner cylinder (304) disposed in the housing (3) varies at a vertical position in the axial direction of the housing (3) (See Figure 19).

In regards to claim 5, 6, and 8, as best understood, Nakashima et al. show a gas generator for an air bag comprising a housing (3) having a gas discharge hole (26), first and second ignition means (12a,12b) activated by the impact, and first and second combustion chambers (5a,5b) accommodating therein gas generating agents (9a,9b) which are ignited and burnt to generate a combustion gas,

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wherein the first combustion chamber (5a) and the second combustion chamber (5b) are separated from each other by separating means (7) having a communication hole (10), the second combustion chamber (5b) is disposed such that it is enclosed by the first combustion chamber (5a),

wherein the flammability of the second combustion chamber (5b) is adjusted by varying the diameter of the communication hole (10) (column 9, lines 16-46);

wherein the communication hole (10) and the gas generating agent (9a) are separated from each other by the retainer (11) such that the communication hole (10) and the gas generating agent (9a) do not come into contact with each other; and,

wherein the number of gas discharge ports (26) formed in the housing is two or more, the gas discharge ports (26a,26b) are closed with shielding members (27) before the gas generator is activated, the shielding members (27) are ruptured in many stages (column 36, lines 4-7) after the gas generator is activated.

In regards to claim 9, as best understood, Nakashima et al. show a gas generator for an air bag comprising a housing (3) having a gas discharge hole (26), first and second ignition means (12a,12b) activated by the impact, and first and second combustion chambers (5a,5b) accommodating therein gas generating agents (9a,9b) which are ignited and burnt to generate a combustion gas,

wherein the first combustion chamber (5a) and the second combustion chamber (5b) are separated from each other by a partition wall (7), the first combustion chamber (5a) and the second combustion chamber (5b) are brought into communication with each other only through a communication hole (10) formed in the partition wall (7), a combustion gas generated in the second combustion chamber (5b) flows into the first combustion chamber (5a) from the communication hole (10) and then, is discharged from the gas discharge hole (26),

wherein a combustion state of a gas generating agent (9b) in the second combustion chamber (5b) is controlled by varying the diameter of the communication hole (10) (column 9, lines 16-46).

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Nakashima et al. disclose the claimed invention except for the retainer being located within the second combustion chamber. It would have been obvious to one having ordinary skill in the art at the time the invention was made to arrange the sealing tape within the second combustion chamber, since it has been held that rearranging parts of an invention involves only routine skill in the art.

Nakashima et al. disclose the claimed invention except for the volume ratios of the second combustion chamber and the first combustion chamber being adjusted from 1/1 to 9/1. It would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust the volume ratio of the second combustion chamber relative to the first combustion chamber, so as to provide a optimum operating combustion pressures, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

Nakashima et al. disclose the claimed invention except for the combustion temperature of the gas generating agent being from 1000 to 1700°C. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a gas generating agent with a combustion temperature, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In addition, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakashima et al. in view of DiGiacomo et al., US Patent 6,447,007 B1.

In regards to claim 4, Nakashima et al. show all of the claimed elements excluding the inner cylinder having an upper portion with a diameter greater than the lower portion.

DiGiacomo et al. teach an inner cylinder (16) disposed in a housing (12) having an upper portion with a diameter greater than a lower portion of the inner cylinder (16) (See Figure 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the inner cylinder of Nakashima et al. in view of the teachings of DiGiacomo et al. to include an upper portion having a diameter greater than the lower portion so as to increase the volume of the inner cylinder in a cost-effective and lightweight manner without increasing the overall size of the inflator (column 2, lines 9-19).

9. Claim 7, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakashima et al. in view of Fukuma et al., US Patent 3,950,263.

In regards to claim 7, Nakashima et al. show all of the claimed elements excluding the retainer being a wire mesh.

Fukuma et al. teach of a retainer being made of a wire mesh.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the retainer of Nakashima et al. in view of the teachings of Fukuma et al. to include being made of mesh so as to provide a securing means that also acts as a filtering means which would, to an extent, cool the gas.

In addition, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a wire mesh retainer, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barry J. Gooden Jr. whose telephone number is (571) 272-5135. The examiner can normally be reached on Monday-Friday 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul N. Dickson can be reached on (571) 272-6669. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Barry J Gooden Jr.
Examiner
Art Unit 3616

BJG


FAYE M. FLEMING
PRIMARY EXAMINER
03/02/06